(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 6 May 2004 (06.05.2004)

PCT

(10) International Publication Number WO 2004/038813 A2

- (51) International Patent Classification?: H01L 31/173, 31/0232
- (21) International Application Number:

PCT/GB2003/004558

- (22) International Filing Date: 22 October 2003 (22.10.2003)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0224503.3 0300434.8

22 October 2002 (22.10.2002) GB 9 January 2003 (09.01.2003) GB

- (71) Applicant (for all designated States except US): UNI-VERSITY COLLEGE CARDIFF CONSULTANTS LTD [GB/GB]; 55 Park Place, Cardiff CF10 3AT (GB).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): SUMMERS, Huw, David [GB/GB]; 6 Ton-yr-ywen Avenue, Health, Cardiff CF14 4PA (GB).
- (74) Agent: GIBSON, Steward, Harry; Urquhart-Dykes & Lord, Three Trinity Court, 21-27 Newport Road, Cardiff CF24 0AA (GB).

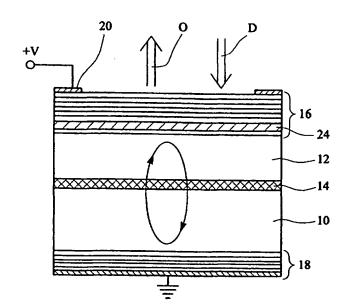
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

 without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SEMICONDUCTOR OPTICAL DEVICES



(57) Abstract: A semiconductor optical device (e.g. a resonant cavity device in this form of an LED or a laser) comprises a single substrate arranged for emitting light (O) for incidence on a sample or other element and also responsive to light (D), e.g. of a different wavelenght, received back from this sample or other element: the device further comprises means for monitoring a characteristic (e.g. its current-voltage characteristic) which varies in dependence upon the light (D) received back from the sample or other element.

